

FIG.1

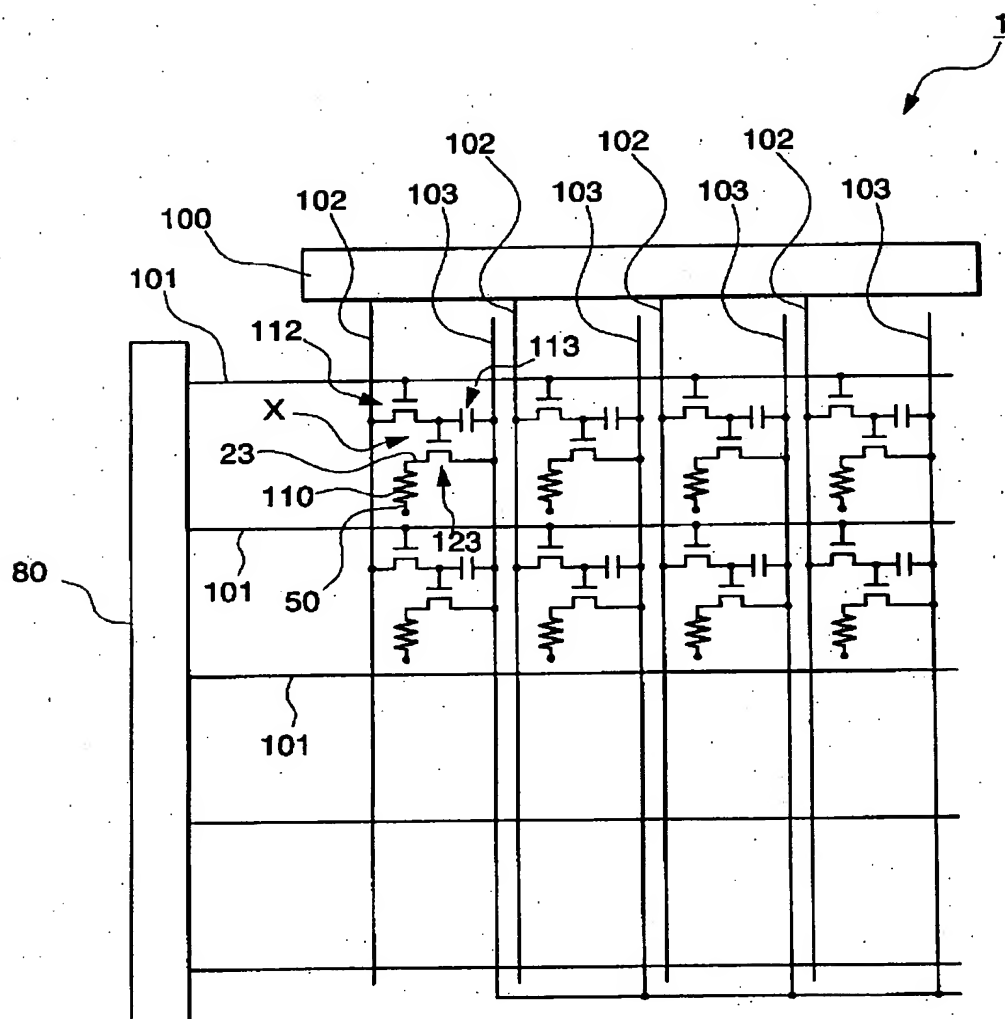


FIG.2

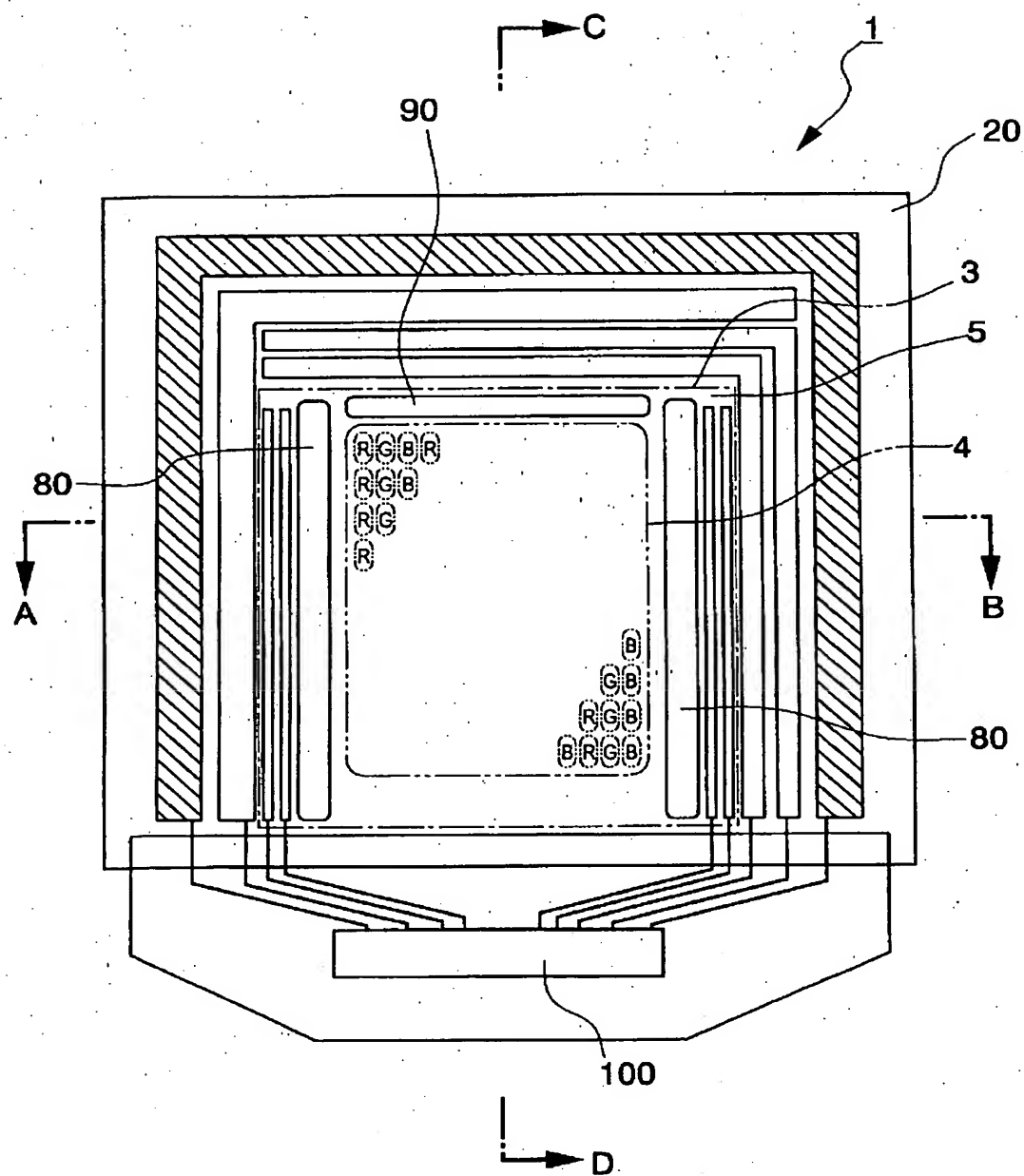
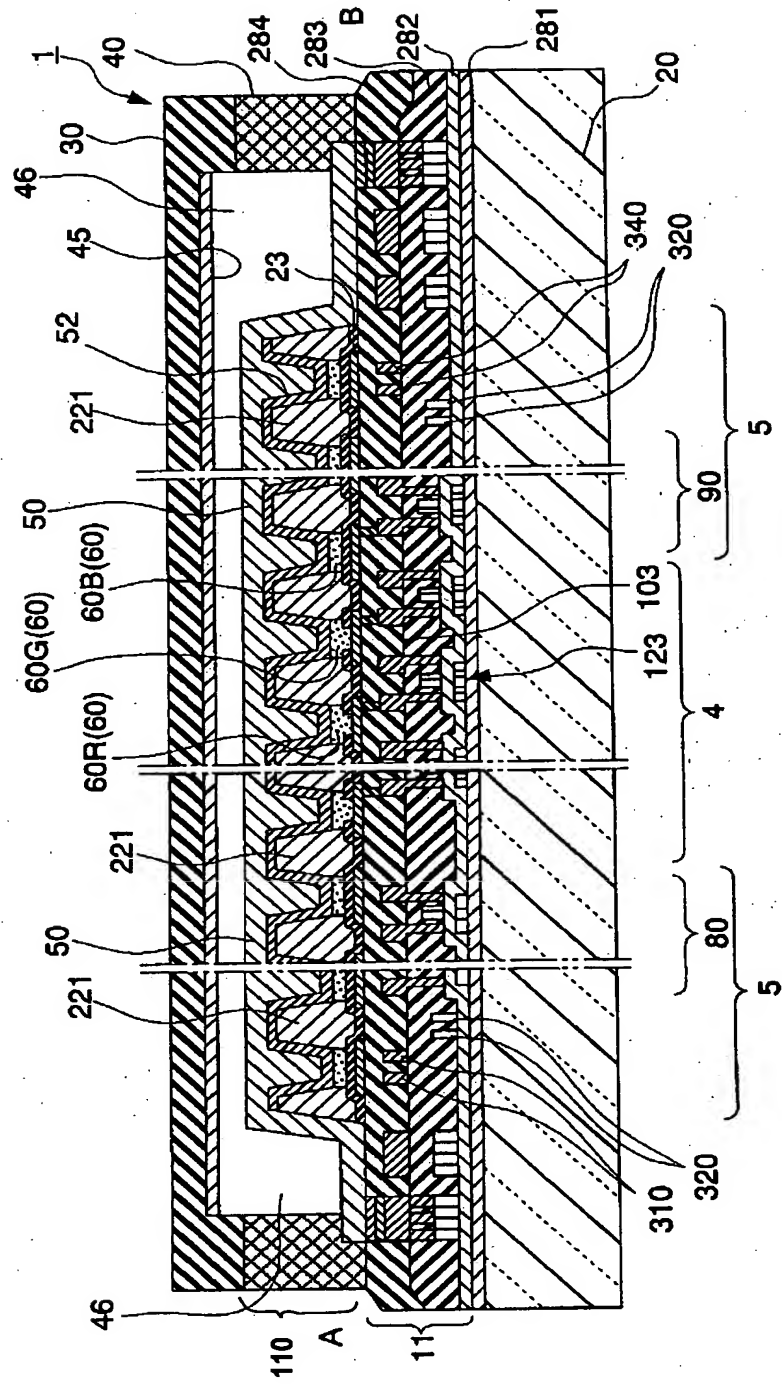


FIG. 3



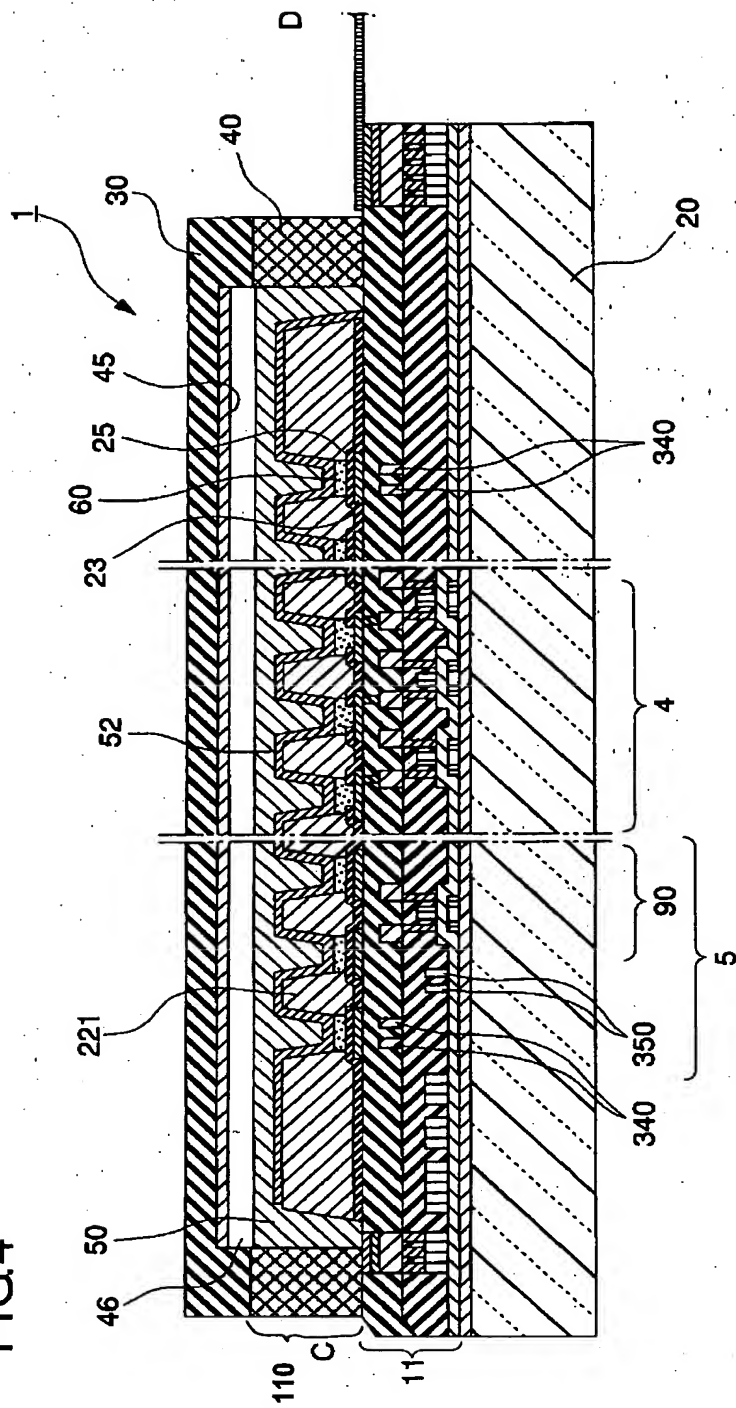
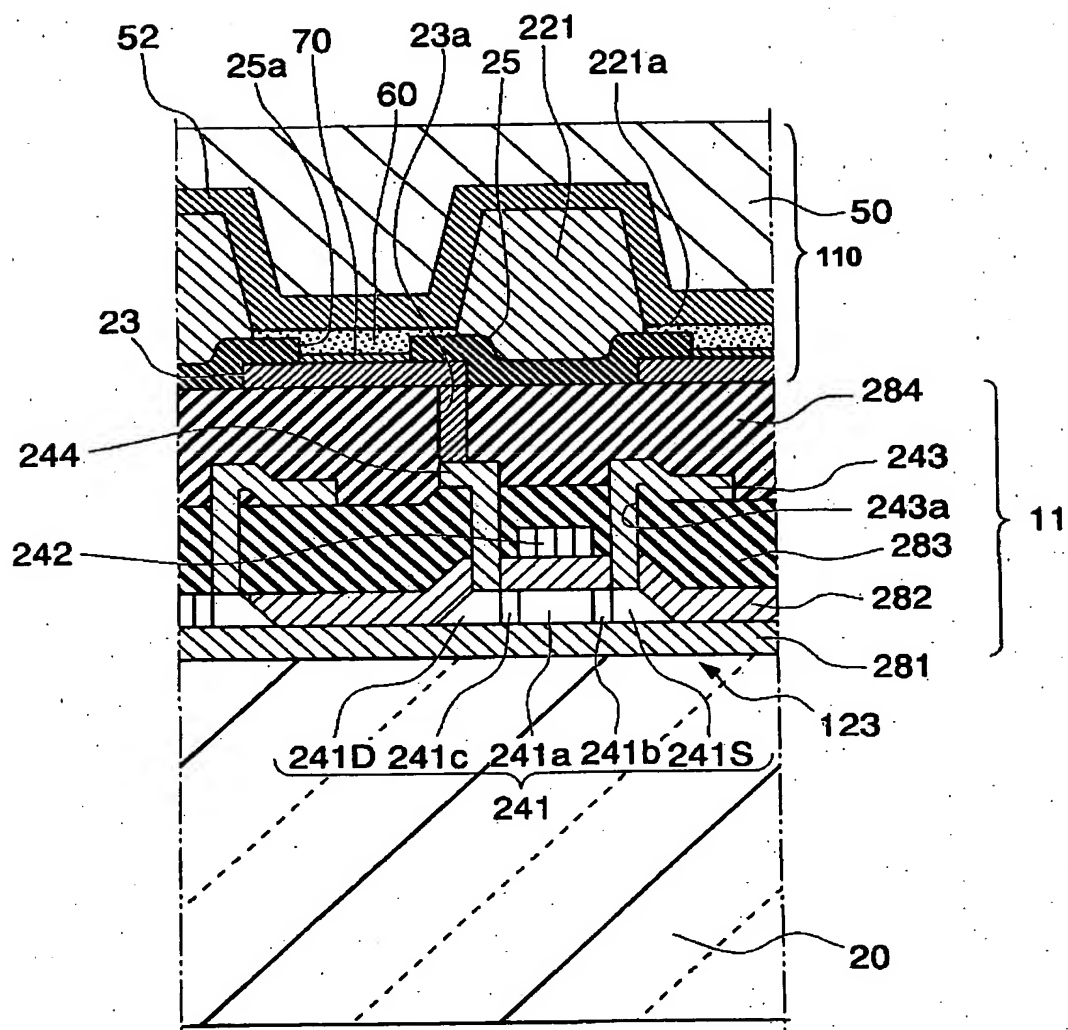


FIG.5



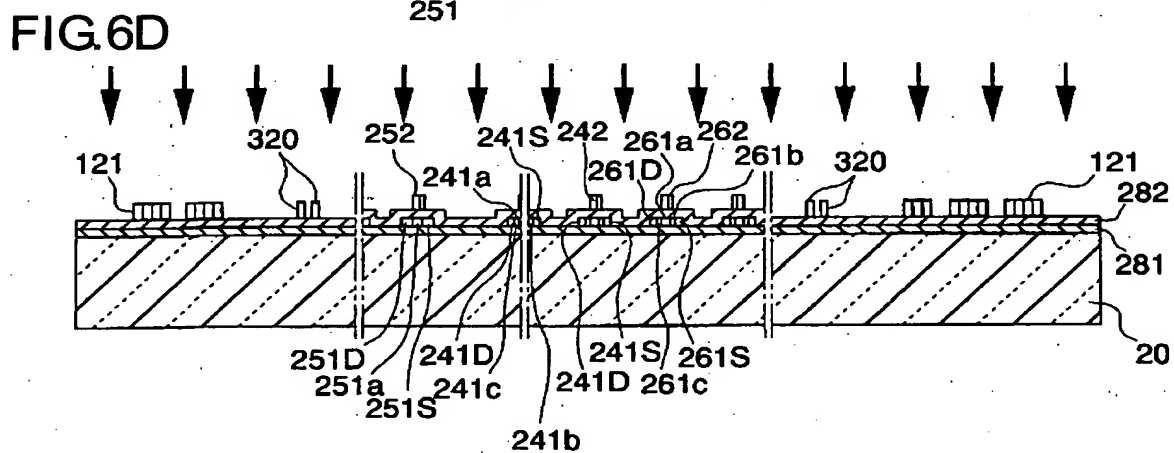
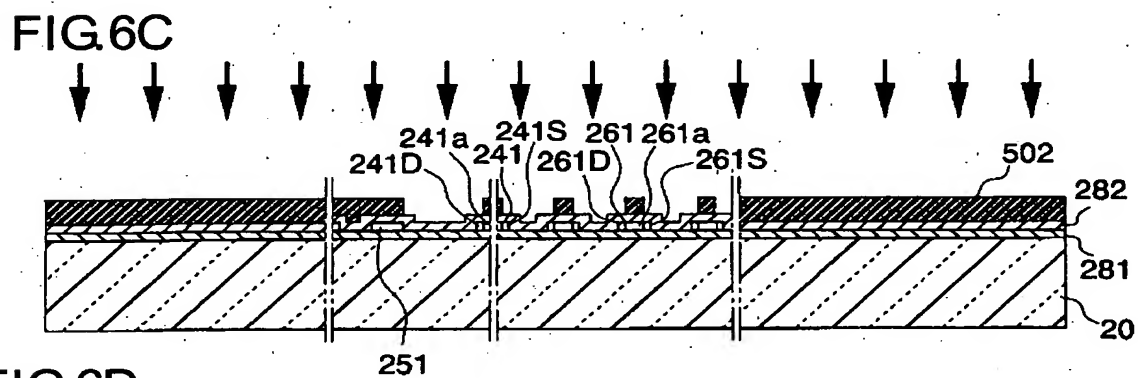
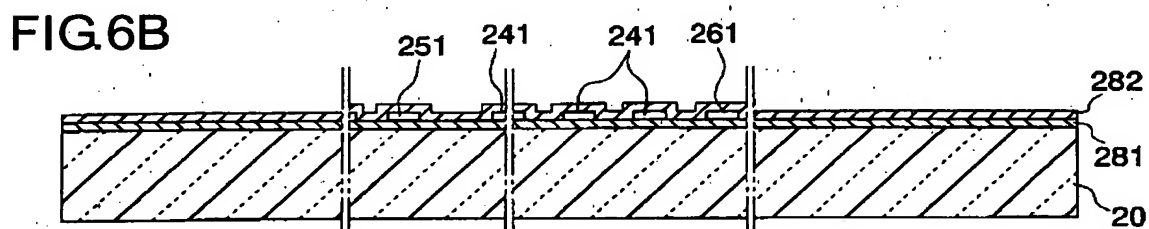
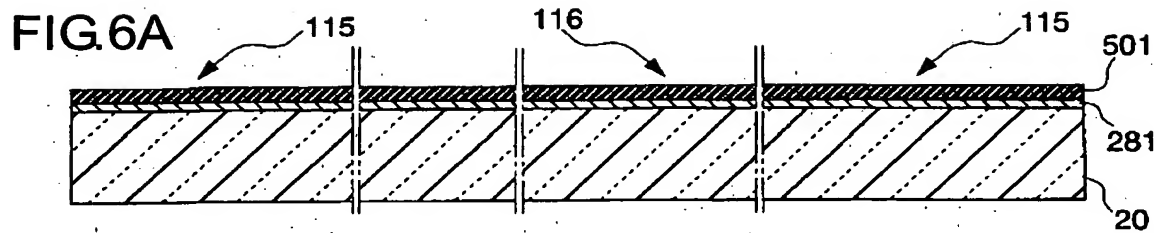


FIG. 7E

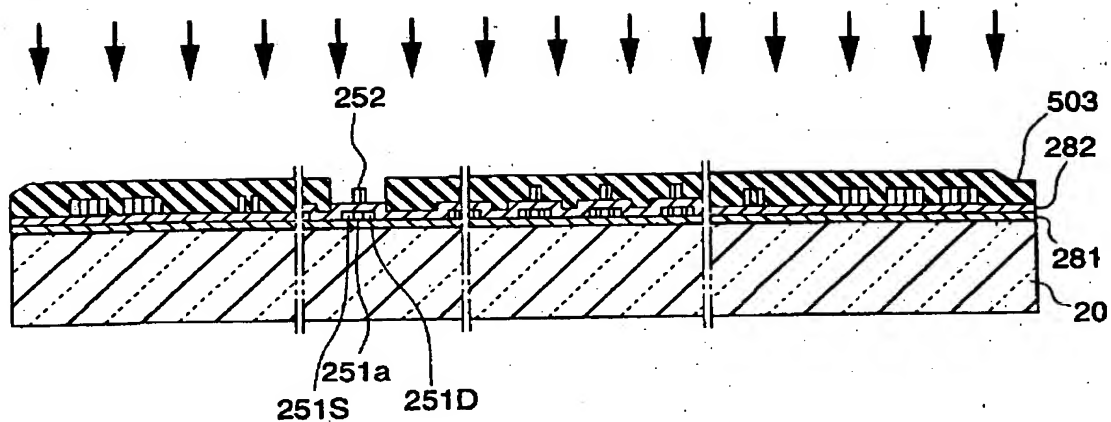


FIG. 7F

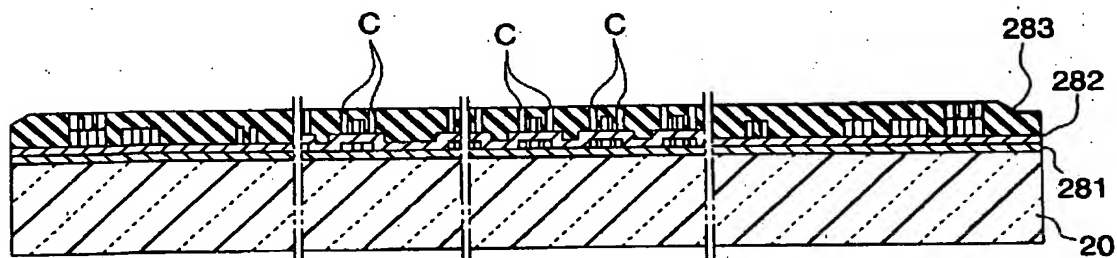


FIG. 7G

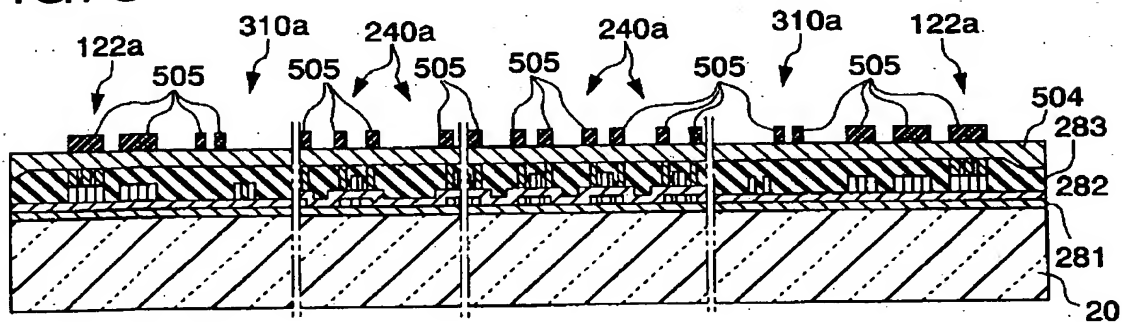


FIG.8H

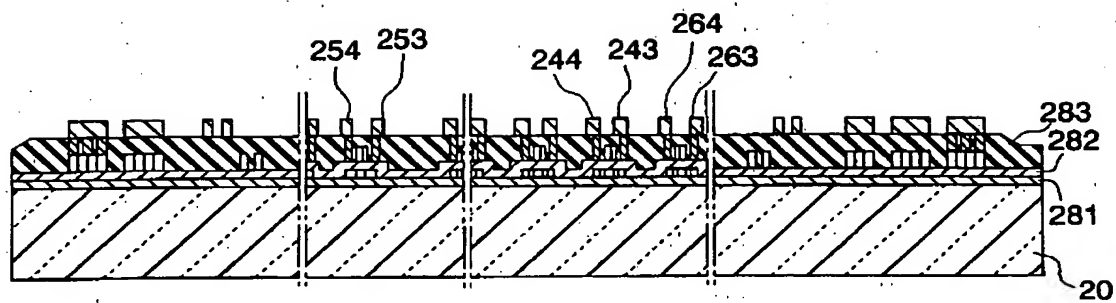


FIG.8I

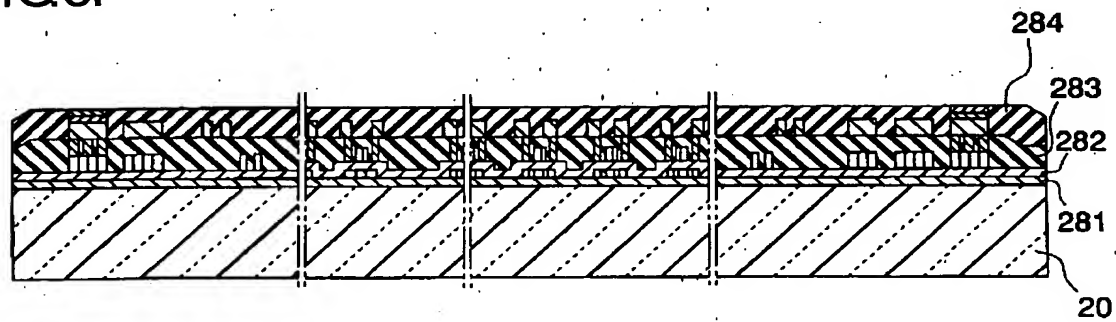


FIG.8J

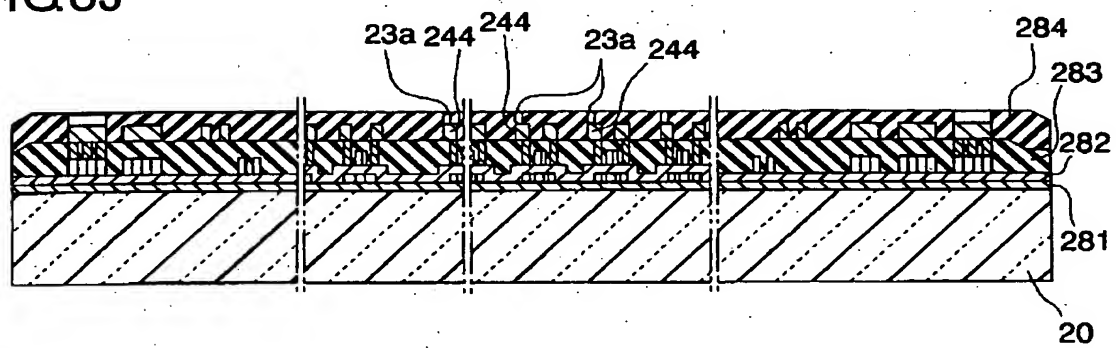




FIG.9K

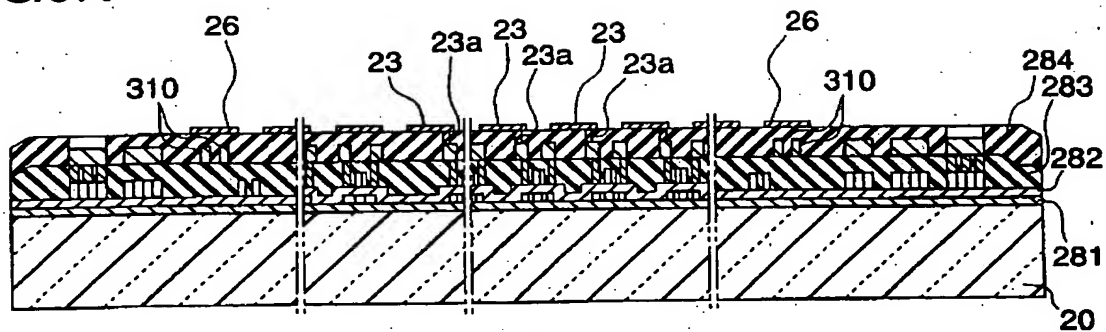


FIG.9L

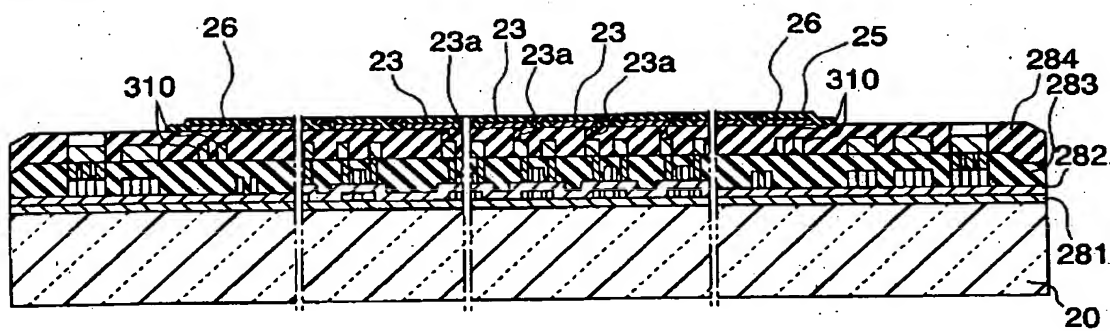


FIG.9M

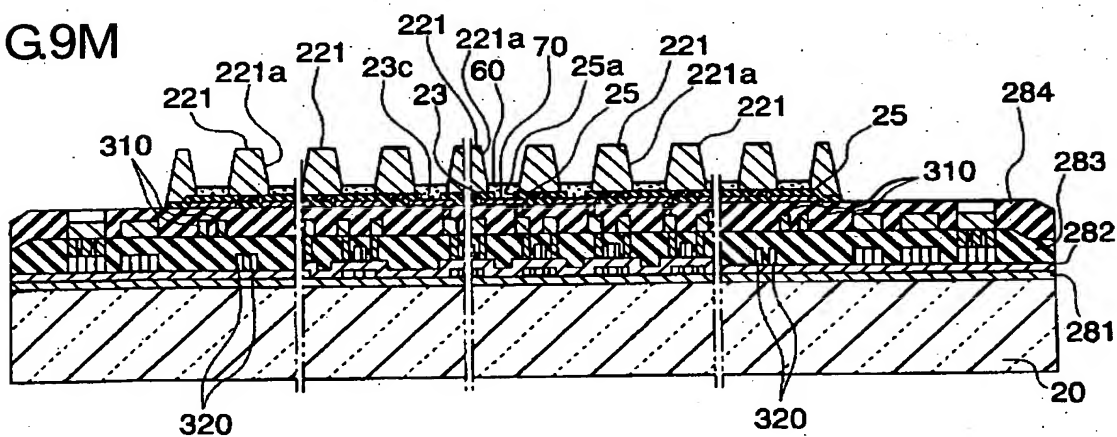


FIG. 10N

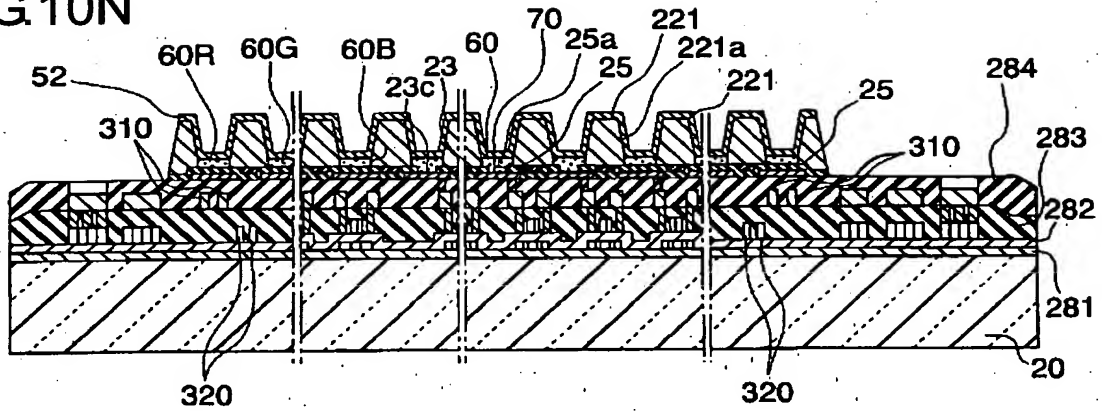


FIG. 10O

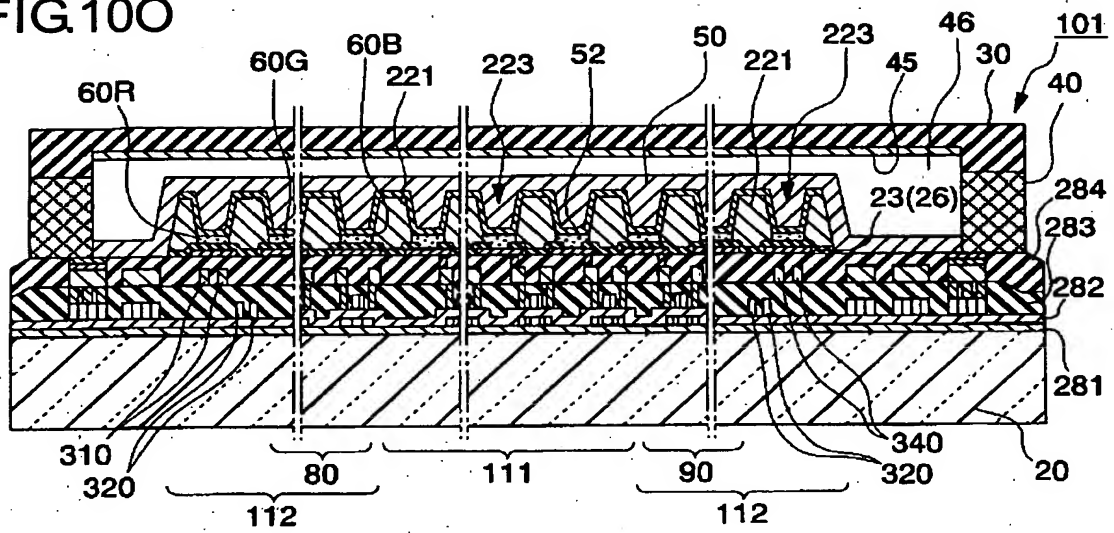


FIG.11

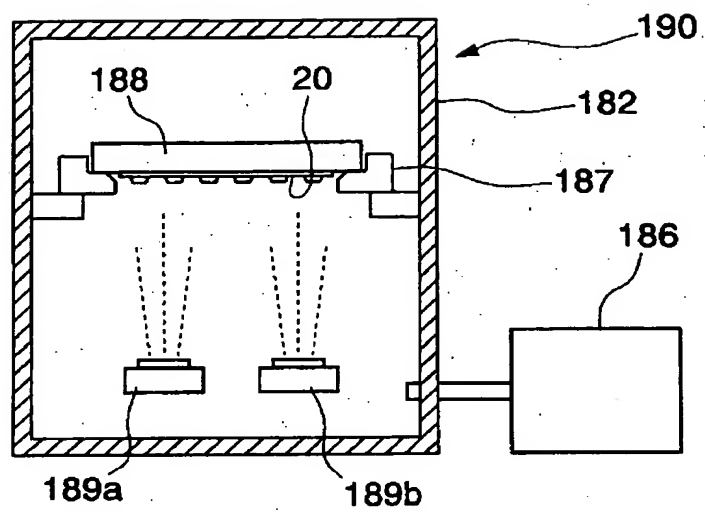


FIG.12

ALKALI METALS (MONOVALENT)

Elements	W.F. (eV)	First ionization energy	m.p.(°C)	b.p.(°C)	Metallic bond radius Å
Li	2.9	5.39	180	1347	1.52
Na	2.75	5.13	97	882.9	1.86
K	2.3	4.33	63	774	2.27
Rb	2.16	4.17	38.9	688	1.52
Cs	2.14	3.89	28.4	678	2.65

ALKALINE EARTH METALS (DIVALENT)

Elements	W.F. (eV)	First ionization energy	m.p.(°C)	b.p.(°C)	Metallic bond radius Å
Mg	3.66	7.64	648	1090	1.6
Ca	2.87	6.11	839	1480	1.97
Sr	2.59	5.62	769	1384	2.15
Ba	2.7	5.21	725	1640	2.22

RARE EARTH METALS (TRIVALENT)

Elements	W.F. (eV)	First ionization energy	m.p.(°C)	b.p.(°C)	Metallic bond radius Å
Y	3.1		1523	3338	
La	3.5		920	3457	
Ce	2.9		798	3426	
Sm	2.7	5.64	1072	1791	1.8
Eu	2.5		822	1597	
Gd	3.1		1311	3266	
Tb	3		1360	3123	
Er	3.2		1522	2863	
Yb	2.6*	6.22	824	1193	1.94

FIG.13

	Element	Atomic radius (Å)	Work function (eV)	Density
	Al	1.43	4.28	2.69
	Ag	1.44	4.26	10.49
Rare earth metal	Yb	1.94	2.6	6.9
	Sm	1.8	2.7	7.53
Alkali metal	Li	1.52	2.9	0.53
	Na	1.86	2.75	0.971
	K	2.27	2.3	0.862
	Rb	1.52	2.16	1.53
	Cs	2.65	2.14	1.87
Alkaline earth metal	Mg	1.6	3.66	1.73
	Ca	1.97	2.87	1.55
	Sr	2.15	2.59	2.63
	Ba	2.22	2.7	3.62

FIG.14

FLUORIDES m.p. °C	
LiF	870
NaF	988
KF	858
RbF	775
CsF	682
MgF <sub>2</sub>	1200
CaF <sub>2</sub>	1360
SrF <sub>2</sub>	1190
BaF <sub>2</sub>	1280

OXIDES m.p. °C	
Li <sub>2</sub> O	1427
Na <sub>2</sub> O	
K <sub>2</sub> O	
Rb <sub>2</sub> O	
Cs <sub>2</sub> O	
MgO	2800
CaO	2570
SrO	2430
BaO	1920

CHLORIDES m.p. °C	
LiCl	
NaCl	800
KCl	
RbCl	718
CsCl	645
MgCl <sub>2</sub>	
CaCl <sub>2</sub>	
SrCl <sub>2</sub>	
BaCl <sub>2</sub>	963

FIG 15A

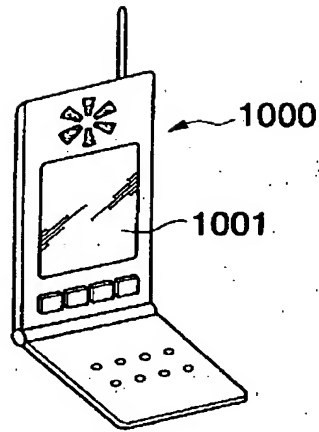


FIG 15B

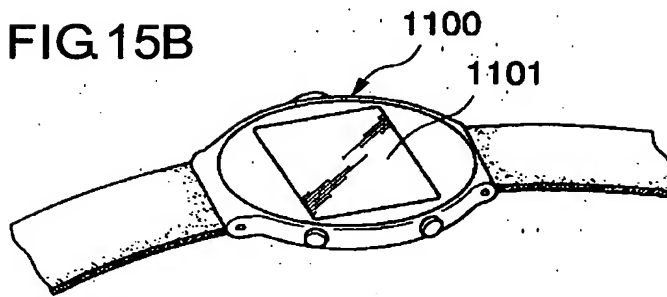


FIG 15C

